

POLYETHYLENE DRAIN PIPEITEM 1460PART 1 GENERAL

WORK INCLUDED: (Sec. 01) Furnish all labor, material and equipment necessary to properly install high-density polyethylene drain pipe as indicated on the drawings and specified.

RELATED WORK: (Sec. 02) Furnished/paid for in this Item: (as applicable)

Earth Excavation/Backfill  
Granular Backfill

Furnish/paid for in respective Item: (as applicable)

Rock Excavation and Backfill  
Bulk Concrete

DESCRIPTION: (Sec. 03) The work consists of earth excavation, Class 1-A bedding, backfilling, the installation, cleanup, and testing of all pipe, fittings and specials and appurtenant work.

QUALITY ASSURANCE: (Sec. 04) Materials shall be new and of the best quality.

REFERENCES: (Sec. 05)

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| ASTM | American Society for Testing and Materials   |
| ODOT | Ohio Department of Transportation, Construction and Material Specifications. Supplemental Specification 944. |

SUBMITTALS: (Sec. 06) Shop Drawings - See General Conditions. Provide two sets for record purposes only.

DELIVERY, STORAGE, HANDLING: (Sec. 07) Handle, unload pipe in accordance with the approved practice specified by the manufacturer.

MEASUREMENT/PAYMENT: (Sec. 08) Per lineal foot, each size, furnished and installed, measured along the axis of the pipe in place.

No deduction will be made for the length of specials or fittings in the line.

Polyethylene pipe specifically included in other Items shall not be included for payment in this Item.

WARRANTY: (Sec. 09) See General Conditions

## PART 2 - PRODUCTS

MATERIALS: (Sec. 10)

Pipe: Pipe and specials shall be high-density polyethylene pipe N-12 and M-294-S as manufactured by Advanced Drain Systems Inc. or equal of the sizes, dimensions and series as indicated or specified.

Pipe in this Item shall conform to ASTM F-405, the pipe and fittings shall be made of virgin polyethylene resins classified as Type III, Class C, Category 5, Grade P34 defined per ASTM D-1248 minimum Cell Class 315412C. Pipe shall be of virgin quality. The polyethylene resin shall also contain anti-oxidants and shall be stabilized against ultraviolet degradation to provide suitable protection during processing and subsequent weather exposure.

Pipe shall be homogenous throughout and free of visible cracks, holes, foreign inclusions or other injurious defects. Pipe shall be marked at intervals of not more than five feet with pipe size, type of plastic material, manufacturers name and the ASTM designation.

Fittings: Fittings shall be molded or fabricated from high density polyethylene. Fabricated fittings shall be made from polyethylene pipe and the pieces joined by thermal fusion.

Joints: Join the pipe by push on or snap on joints.

Bedding Material: Shall be ASTM D-2321 Class I-A.

## PART 3 - EXECUTION

INSTALLATION: (Sec. 11) Before installing any pipe, a representative of the pipe manufacturer shall be present to instruct the workmen in the proper procedures for installing the pipe.

Cut and join pipe in accordance with the manufacturer's instructions.

Underground Installation: Use laser beam for establishing line and grade. The method used shall be as recommended by the manufacturer of the laser equipment and must be satisfactory to the Resident Representative. The laser beam shall not be of greater power than 2.5 milliwatts (0.0025). A continual visual check shall be provided by the laser equipment.

The Contractor shall not deviate from the required line or grade without the written consent of the Consulting Engineer.

Perform excavation and backfilling as specified in the applicable Item for

excavation/backfill.

Install pipe and fittings in accordance with the requirements of ASTM D-2321, "Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe." Carefully examine pipe and fittings for defects just before laying and use no pipe or fittings known to be defective. Pipe and fittings shall be thoroughly cleaned before being laid and shall conform to the lines and grades indicated.

Lay pipe in bedding as indicated on the Drawings. Uniformly support the pipe throughout its length. Place all bedding on undisturbed earth or well compacted backfill.

After 30 days the contractor shall furnish all labor, materials and equipment and perform a deflection test using a mandrel whose diameter is equal to 95% of the inside diameter of the pipe, manually pulled through the sewer line.

The mandrel shall have a minimum of eight legs, and shall test for inside diameter dimensions 95% of those stated in ASTM D-3034.

Deflection tests shall be made on all sections of sewer.

Deflection of the pipe shall not exceed 5%.

Any section of pipe not meeting the deflection test shall be uncovered and "rerounded" by re-compacting the bedding material, or by other means as required, or as directed by the Resident Representative, and the pipe retested until it meets requirements.

Store pipe delivered to the job site so as to minimize the entrance of foreign material. At the end of the day, and at such other times that work is not in progress, close all openings in the pipe line to prevent earth and other matter from entering. Complete joints of all pipe in the trench before work is stopped. If water accumulates in the trench, plugs shall remain in place until the trench is dewatered.

FIELD QUALITY CONTROL: (Sec. 12)

CLEAN UP: (Sec. 13) Surface clean-up shall immediately follow backfilling, including removal of all surplus excavation, pipe, broken concrete, stones and all miscellaneous debris. Rough grading providing drainage shall be included.